

What is claimed is:

1. A radio communication apparatus comprising:

a transmit power determiner for determining a transmit power value that will not interfere with communications between other stations based on a transmit power value obtained from the communications between the other stations;

an estimator for estimating propagation path loss of a communication channel based on propagation path loss information; and

a transmission rate determiner for determining a transmission rate value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path loss.

2. A radio communication apparatus comprising:

a receiver for receiving a transmit power value and a transmission rate value determined by the other end of communication; and

a transmitter for transmitting user data with the transmit power value and the transmission rate value.

3. The radio communication apparatus according to claim 1, wherein the estimator estimates the propagation path loss, as the propagation path loss information, using a value indicating the reception quality of a known reference signal sent back from the other end of

communication in response to the known reference signal transmitted from the radio communication apparatus.

4. The radio communication apparatus according to claim 1, wherein the estimator estimates the propagation path loss, as the propagation path loss information, using the reception power value and the transmit power value sent from the other end of communication.
- 10 5. The radio communication apparatus according to claim 1, wherein the estimator estimates the propagation path loss based on the propagation path loss information acquired a plurality of times during a predetermined time.
- 15 6. The radio communication apparatus according to claim 1, wherein the transmission rate determiner has a table of correspondence between determined transmit power values, estimated propagation path loss and transmission rate values and determines the transmission rate value with reference to the table of correspondence.
- 20 7. The radio communication apparatus according to claim 1, further comprising a transmitter for transmitting the determined transmit power value and the determined transmission rate value as a control signal and transmitting user data with the determined transmit power value and the determined transmission rate value.

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8. A base station apparatus equipped with a radio communication apparatus, the radio communication apparatus comprising:

5 a transmit power determiner for determining a  
transmit power value that will not interfere with  
communications between other stations based on a  
transmit power value obtained from the communications  
between the other stations;

10 an estimator for estimating propagation path loss  
of a communication channel based on propagation path loss  
information; and

a transmission rate determiner for determining a transmission rate value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path loss.

9. A base station apparatus equipped with a radio  
20 communication apparatus, the radio communication  
apparatus comprising:

a receiver for receiving a transmit power value and a transmission rate value determined by the other end of communication; and

25 a transmitter for transmitting user data with the  
transmit power value and the transmission rate value.

10. A communication terminal apparatus equipped with a

radio communication apparatus, the communication terminal apparatus comprising:

a transmit power determiner for determining a transmit power value that will not interfere with  
5 communications between other stations based on a transmit power value obtained from the communications between the other stations;

an estimator for estimating propagation path loss of a communication channel based on propagation path loss  
10 information; and

a transmission rate determiner for determining a transmission rate value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path  
15 loss.

11. A communication terminal apparatus equipped with a radio communication apparatus, the communication terminal apparatus comprising:

20 a receiver for receiving a transmit power value and a transmission rate value determined by the other end of communication; and

a transmitter for transmitting user data with the transmit power value and the transmission rate value.

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12. A radio communication method, wherein one radio communication apparatus determines a transmit power value that will not interfere with communications

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between other stations based on a transmit power value obtained from the communications between the other stations, estimates propagation path loss of a communication channel, determines a transmission rate 5 value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path loss, sends the determined transmit power value and the determined transmission rate value as a control signal and sends user data with 10 the determined transmit power value and the determined transmission rate value, and

the other radio communication apparatus sends user data with the transmit power value and the transmission rate value sent from the one radio communication 15 apparatus.

13. The radio communication method according to claim 12, wherein the transmission rate value is determined before the user data is sent and the transmission rate 20 value is not changed until the communication is completed.

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